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EXAMINER
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METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/831,566

Applicant(s)

REETZ ET AL.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-24, 26-30 and 32-44 is/are rejected.
- 7) ☒ Claim(s) 25, 31 and 45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 21-45 are pending.

#### ***Claim interpretation***

1. The term colloid has not been specifically defined in the specification and therefore takes the plain meaning in the art. Colloid is generally understood to be a system having a dimension of less than one micron. It is noted that claim 21 contains a stabilizer and that claim 27 does not contain a separation step. Although, it is further noted that each of the examples sets forth a colloid powder.

Claims must be given their broadest reasonable interpretation consistent with the specification, during patent examination.

#### ***Claim Objections***

2. Claims 40 and 42-43 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. All the claims are dependent directly or indirectly on independent claim 21. Independent claim 21 is directed to metal oxide colloids. The methods of claim 40 or 42 destroys or chemically reacts the metal oxide colloid, which claims subject matter that is outside of the metes and bounds of claim 21. Therefore, claims 40 and 42 are not further limiting of the subject matter of claim 21.

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Furthermore, the claims directed to "fixing" and "immobilizing" also make materials and/or articles that are no longer colloids, are inconsistent with claim 21 and outside of the metes and bounds of claim 21.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 40, 42 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 40 and 42-43 are directed to process limitations but are dependent on claim 21, which is directed to a composition. Therefore, the phrase "A process for fixing colloids according to claim 21" lacks proper antecedent basis.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 21, 23-24, 26-27, 29-30, 32-35, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Moumen et al, "New Synthesis of Cobalt Ferrite Particles in the range of 2-5 nm: Comparison of the Magnetic Properties of the Nanosized Particles in Dispersed Fluid or in Powder Form", Chemical Materials, 1996,

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8, pages 1128-1134. See the abstract and page 1129, Experimental Synthesis. Absent a teaching to the contrary, it is logical to conclude the methods of Moumen et al are performed at room temperature, which includes about 20° to 25° C (see instant claim 35).

See Moumen et al (page 1131 VI Comparison of the magnetic Behavior of Nanosized Particles Dispersed in an Aqueous Fluid and in Powder Form) for the water re-dispersibility.

7. Claims 21-24, 26-30, 32-35, 37-39 and 41 are rejected under 35 U.S.C. 102(b) as being anticipate by Bonnemann et al, WO 96/17685. See examples 5, 6, and 8-10. Since the claims define the colloid rather than a colloid powder and without separation, it is reasonable to conclude that the oxide is inherent to the Bonnemann et al process. It is clear said oxide is formed otherwise there would exist nothing to be reduced in the reduction step of streaming H<sub>2</sub> for 3 or 4 hours.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moumen et al, "New Synthesis of Cobalt Ferrite Particles in the range of 2-5 nm: Comparison of the Magnetic Properties of the Nanosized Particles in Dispersed Fluid or in Powder Form", Chemical Materials, 1996, 8, pages 1128-1134. See the abstract and page 1129, Experimental Synthesis.

While Moumen et al may not conduct their process at a temperature between 50 and 90° C, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to perform the process of Moumen et al at a high temperature to increase the rate of hydrolysis and/or condensation. It is well settled that the choice of a suitable or optimum temperature, absent a showing of criticality, is within the ordinary skill level of those skilled in the art.

11. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bonnemann et al, WO 96/17685, as applied to claim 21-24, 26-30, 32-35, 37-39 and 41 above, and further in view of Day et al, US 4,197,187. See Bonnemann et al, examples 5, 6, and 8-10.

To the extent Bonnemann et al differs from claim 44 in the incorporating the metallic colloids into sol-gel supports, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention was made to employ a sol-gel

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alumina of the Day et al reference (example) as a support in the process of Bonnemann et al rather than the carbon support for the advantages pointed out in the Day et al reference (column 4, lines 46-88), i.e., better selectivity and improved yields in hydrocarbon conversion. Bonnemann et al (page 6, lines 6-11) clearly contemplates the use of metal oxide carriers. Please compare and contrast with instant page 7, last full paragraph description of supports.

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 21-24, 26-30, 32-35, 37-39 and 41 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 6,090,746. Although the conflicting claims are not identical, they are not patentably distinct from each other because the breath of the instant claims

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encompasses the patented claims and the colloids inherently would be present in the 6,090,746, processes.

***Allowable Subject Matter***

14. Claims 25, 31, and 45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: attention is directed to paragraph number 8 of the Office Action Mailed February 26, 2003.

***Response to Arguments***

16. Applicant's arguments filed July 21, 2006 have been fully considered but they are not persuasive.

17. Applicants amendments to claims 27 and 38 do not resolve the issues regarding claims 40, 42 and 43 in the objection and/or rejection under 35 USC 112, second paragraph.

18. Applicants (page 9 of the above noted response) assert the invention is properly broadly claimed and include, but are not limited to, an original colloidal solution, a powdered form thereof, and any re-dispersed colloid.

19. Applicants (page 10) assert Moumen et al lacks a disclosure that the Moumen et al are not "[a]dditive stabilized, 100% water-redispersible metal oxide colloids".

Applicants further assert the colloids can only be stabilized if organic solvent as 50%



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ethylene glycol is employed in water. This has not been deemed persuasive for the following reasons:

Initially, the claims employ open transitional language, i.e., "comprising".

The stabilizer is not specifically defined. It is somewhat limited in claim 26 to sub-generic groups. The SDS and ethylene glycol disclosed in Moumen et al read on applicants "at least one water-soluble additive capable of stabilizing said colloids.

Lastly, there is no evidence of record to show the compositions of Moumen et al, when added to an unspecified amount of 100% water, would not be dispersed. As pointed out previously, in colloid chemistry, "Colloidal compositions are generally dispersible in a substance that makes up their external phase. To the extent applicants intend powders, the claims should so state." See page 4, lines 10-12 of Office Action mailed March 21, 2006. Applicants do not contest said generally accepted characteristic.

20. Applicants (pages 10 and 11) assert the Bonnemann et al reference does not disclose the formation of an "[a]dditive stabilized, 100% water-redispersible metal oxide colloids" and that the Bonnemann et al reference discloses the reduction of metal salt solutions rather than the formation of a metal oxide colloid as claimed. This has not been deemed persuasive for the following reasons:

A review of applicants claims will show that (taking the independent claims) the concentration of the metal oxide in the colloid is not defined. Furthermore, the claims employ open transitional language, i.e., "comprising", which would not exclude the

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further presence of metal salts. A review of the process claims show the formation of the metal oxide from the addition of a base to the metal salt solution.

A further review of the Bonnemann et al reference (examples, particularly at least example 5) is the formation of an aqueous solution of  $\text{PtCl}_2$  with the further addition of a base, i.e.,  $\text{Li}_2\text{CO}_3$ , followed by addition  $\text{H}_2$ . Since the compositions are made by the same process, it would be reasonable to conclude metal oxides are formed. These metal oxides are then reduced by the addition of the  $\text{H}_2$ . Applicants have provided no evidence to refute the Offices premise and/or conclusions. A holding of inherency may be based on scientific reasoning and does not require the claimed limitations *ipso verba*.

Applicants (page 11) assert it is the metal salt rather than the metal oxide, which is reduced, said reduction leading to the reduced metal colloid rather than the metal oxide colloid. While metal salt can be reduced, the formation of oxides would have been expected in the Bonnemann et al reference as well as the reduction of any oxides formed therein.

21. Applicants assert the rejection of claim 36 as obvious over Moumen et al reference should be withdrawn in view of the arguments presented in response to the anticipation rejection. This has not been deemed persuasive and said arguments have been addressed above.

22. Applicants assert the rejection of claim 44 as obvious over Bonnemann et al reference should be withdrawn in view of the arguments presented in response to the

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anticipation rejection. This has not been deemed persuasive and said arguments have been addressed above.

23. Applicants assert the Obviousness Double Patenting rejection as obvious over Bonnemann et al reference should be withdrawn in view of the arguments presented in response to the anticipation rejection. This has not been deemed persuasive and said arguments have been addressed above.

### ***Conclusion***

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Daniel S. Metzmaier**  
**Primary Examiner**  
**Art Unit 1712**

DSM